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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,891	10/23/2003	Yucong Wang	GP-303433	9021
7590 LESLIE C. HODGES General Motors Corporation Legal Staff, Mail Code 482-C23-B21 P.O. Box 300 Detroit, MI 48265-3000			EXAMINER CHARLES, MARCUS	
			ART UNIT	PAPER NUMBER
			3682	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/09/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/691,891

Applicant(s)

WANG ET AL.

Examiner

Marcus Charles

Art Unit

3682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is response to the submission filed 10/23/2006, which has been entered.

Claims 1-11 are currently pending.

Drawings

1. The drawing filed with this application is accepted by the examiner.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiba et al. (6,254,503) in view of JP (2002-178151) to Kagami et al. Chiba et al. discloses a pulley for a CVT comprising first and second pulley halves (2/4) having truncated movable portions symmetrically opposite to each other (col. 3, lines 46-50) and are movable relative to each other on a rotational axis. Each pulley half has a sloping surface (3/5) with a maximum height roughness average Ry of 0.6-2.5 micrometer and the centerline average roughness of 0.1 to 0.5. Chiba et al. fail to disclose the average roughness (Ra, y) measured in a direction (y) circumferential to the x-axis. However, it is well known in the art that the average roughness in the circumferential direction is inherently included in a circular disk. Kagami et al. discloses a disk circumferential surface having an average roughness in the circumferential direction of about 0.7-10.00 μm (which is within the range of the claimed invention).

Therefore, it would have been obvious to one of ordinary skill in the art to modify the roughness Chiba et al. so that the average roughness of (R_a, y) of the maximum height (R_y) is 0.02 to 0.6 micrometer in view of Kagami et al. in order to avoid large and uneven irregularities.

In claims 2, 6, it should be noted that the range of the centerline average roughness of Chiba et al., which is about 0.1 to 0.5 μm , and the circumferential average roughness of Kagami et al. of 0.7-10.00 will result in a ratio within the range of 0.5-2.5. Note an example is 0.5 μm / 0.7 μm is approximately 0.71.

In claims 3, 8 and 11, Chiba et al. disclose the roughness surfaces are carried out by machining such as grinding and shot-peening (col. 3, lines 11-13).

Regarding claims 4, 7 and 10, Chiba et al. in view of Kagami et al. disclose the claimed invention except for the ratio $(R_a, x)/(R_a, y)$ is between 1.7 and 2.3. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the roughness of Chiba et al. in view of Kagami et al. so that the ratio $(R_a, x)/(R_a, y)$ is between 1.7 and 2.3, since it had been held that where the general conditions of the claim are disclose in the prior art, discovering the optimum ranges involves only routine skill in the art. *In re Aller*, 105 USPQ.


Response to Arguments

4. Applicant's arguments, filed 10-23-2007, with respect to the rejection(s) of claim(s) 1-11 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Kagami et al.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marcus Charles whose telephone number is (571) 272-7101. The examiner can normally be reached on Monday-Thursday 7:30 am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ridley Richard can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Marcus Charles
Primary Examiner
Art Unit 3682
January 06-2007